

Claims

1. A cleaning apparatus comprising an article, a burnishing object positioned over or under the article, and a device that (a) rotates the burnishing object at an offset angle that is variable over an area of the article and (b) translates the burnishing object relative to the article to advance a position of a contact of the burnishing object with the article across a surface of the article.
2. The cleaning apparatus of claim 1, wherein the burnishing object is not contacted to the article by air directed to the burnishing object.
3. The cleaning apparatus of claim 1, wherein the article is a rotating disk.
4. The cleaning apparatus of claim 3, wherein the offset angle changes as the position of the contact advances from an inner diameter to an outer diameter of the disk.
5. The cleaning apparatus of claim 1, wherein the cleaning apparatus removes particles from the surface of the article.
6. The cleaning apparatus of claim 1, wherein the device simultaneously rotates and translates the burnishing object.
7. The cleaning apparatus of claim 1, wherein the device creates a wiper blade motion of the burnishing object on the surface of the article.

8. The cleaning apparatus of claim 1, wherein the device allows the burnishing object to make and break the contact of the burnishing object with the article across the surface of the article.

9. The cleaning apparatus of claim 1, wherein the burnishing object is a tape.

10. The cleaning apparatus of claim 1, wherein the burnishing object is a pad.

11. A method of operating a cleaning apparatus comprising an article and a burnishing object positioned over or under the article, the method comprising (a) rotating the burnishing object at an offset angle that is variable over an area of the article and (b) translating the burnishing object relative to the article to advance a position of a contact of the burnishing object with the article across a surface of the article.

12. The method of claim 11, wherein the burnishing object is not contacted to the article by air directed to the burnishing object.

13. The method of claim 11, wherein the article is a rotating disk.

14. The method of claim 13, wherein the offset angle changes as the position of the contact advances from an inner diameter to an outer diameter of the disk.

15. The method of claim 11, wherein the cleaning apparatus removes particles from the surface of the article.

16. The method of claim 11, wherein the rotating and translating of the burnishing object is done simultaneously.

17. The method of claim 11, wherein the burnishing object makes and breaks the contact with the article across the surface of the article.

18. The method of claim 11, wherein the burnishing object is a tape.

19. The method of claim 11, wherein the burnishing object is a pad.

20. A cleaning apparatus comprising an article, a burnishing object positioned over or under the article, and means for simultaneously translating and rotating the burnishing object on the article.